which have for their object the maintenance of the health of man and beast in Canada. It is a very important matter. We know of none which is equal to it. We believe that the sound sense and good judgment of Canadians everywhere will support the enforcement of laws which have for their object the restricting of the spread of disease by all means known to science. It will doubtless be the duty of the State to reimburse, to some extent, at least, losses due to the slaughter of infected animals.

The bulletin states that the objects sought in the experiments conducted were :

1. To test the effect of feeding to pigs milk known to contain virulent bacilli of bovine tuberculosis.

2. To test the effect of feeding pasteurized milk to pigs.

3. To determine whether there is any difference in the susceptibility of pigs fed tuberculous milk when on pasture and in small, dry yards.

For the experiments, forty pigs were divided into four lots of ten each, and each was fed corn meal and shorts, in addition to special treatment, as follows :

Lot 1 was kept on timothy pasture, and fed pasteurized skim milk.

Lot 2 was kept on timothy pasture and fed skim milk containing bacilli of bovine tuberculosis.

Lot 3 was kept in a small, dry yard and fed pasteurized skim milk.

Lot 4 was kept in a small, dry yard and fed skim milk containing bacilli of bovine tuberculosis.

Conclusions :

1. That pigs fed milk containing virulent bacilli of bovine tuberculosis are very likely to become quickly and seriously infected with the disease.

2. That properly pasteurized creamery skim milk is a safe food for pigs.

3. That pigs in small, dry yards are not more susceptible than pigs in pasture.

4. That every precaution should be taken to know definitely that all milk and other animal products fed to pigs are free from tuberculosis.

H. H. D.

THE FARM.

CORRECT ANGLE OF WINDMILL FANS DEMONSTRATED BY EXPERIMENT.

Editor " The Farmer's Advocate " :

Replying to Mr. Jeffrey's question, in your esteemed issue of December 19th, permit us to say, as manufacturers of the Canadian Airmotor, that the question is a simple one. In a windmill fan, whether the wooden style, known as the " Halladay," or the modern steel mill, the fan is secured to the rims at a certain well-defined angle, usually about 25 degrees. Sufficient experimenting has been done during the last thirty or forty years to clearly demonstrate the correct angle necessary to procure the maximum power. Therefore, the question of the proper angle that a sail or fan should present to the wind was determined long before the present steel mills were perfected. In the wooden mills, the slats or fans naturally were flat, without concave. But, with the advent of steel mills, it was found that a slight concave in the fan added materially to the power of the mill. This concave is just sufficient to somewhat catch the wind, and yet not sufficient to retard it, for the power is obtained by allowing the wind to pass through the fans. The fact that an 8-foot steel wheel will do the work that formerly necessitated a 10-foot wooden Halladay mill, demonstrates that the gain was made, not only in substituting lighter and stronger material, but also in giving the fans a slight concave form.

In Mr. Jeffrey's boat theory, it is obvious that it is the duty of the sail to catch the wind and hold it, in order that it might do its duty. In the case of the windmill, it is only necessary to catch the pressure for a moment, then allowing the wind to pass through the fans, the power then having been extracted in the movement of the fans.

THE ONTARIO WIND ENGINE AND PUMP CO.

A SANE AND COMPLETE STATEMENT OF THE CASE.

Have just received your special Christmas Number of " The Farmer's Advocate," and wish to congratulate you upon its excellence, both in subject matter and general fine finish. The illustrations are as good as the best.

I have read with much interest your article, entitled, " The New Education for Rural Schools," and would like to know who wrote it. It is one of the sanest and most complete statements of the case that I have seen. I wish you abundant success in the campaign for the improvement of our rural schools, and prosperity for the New Year in all your work. Thanking you for this very excellent copy of the Christmas Number.

Frontenac Co., Ont. J. W. GIBSON.

EXPERIMENT WITH FERTILIZERS ON ROOT CROPS.

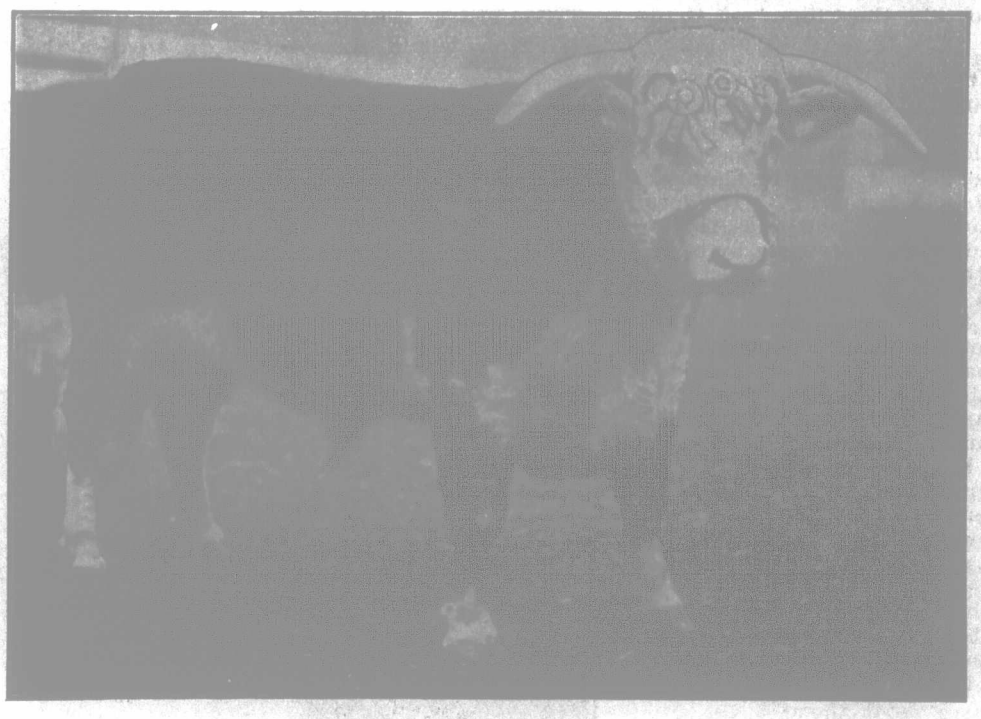
Editor " The Farmer's Advocate " :

I have never had much faith in the application of commercial fertilizers to farm crops. In the spring of 1907, however, at the request of a representative of the Potash Syndicate, I agreed to try an experiment for comparison. The results, as given below, are very pleasing. For both mangels and turnips, three one-quarter-acre plots were taken and given the same treatment as to cultivation, seeding, thinning, etc., but different in the application of fertilizer. The soil was light clay loam; land which had been under rotation for six years, and had been treated to a light dressing of farm manure the previous year. A timothy-and-clover sod was plowed under in the fall and grubbed in the spring to a depth of about six inches, then harrowed thoroughly with disk and spring-tooth harrows, after broadcasting the necessary fertilizers.

The seed was sown in drills, thirty inches apart, for turnips, at rate of 2 lbs. per acre; and mangels at rate of 9 lbs. per acre. The mangels were sown May 24th; turnips, June 4th and 5th. Cultivation began June 15th, and continued every ten days until August 28th. Mangels were thinned to about eight inches, and turnips to about ten inches. Mangels were pulled from 20th to 25th of October, and turnips from 5th to 15th November. Below is the summary of yields, etc.:

MANGELS.

Per Acre.	Yield Per Acre. Bushels.	Increased Yield Per Acre. Bushels.
Plot 1—No fertilizer	661	
Plot 2—Muriate potash, 160 lbs. Acid phosphate, 400 lbs. Muriate of soda, 180 lbs.	1272	611
Plot 3—Acid phosphate, 400 lbs. Nitrate soda, 180 lbs.	924	263



Two-year-old Hereford Steer.

Breed champion; winner of two cups and reserve for grand championship, Birmingham Fat-stock Show, 1907. Weight, at 940 days, 1,955 lbs.; average daily gain from birth, 2.08 lbs.

To get the profit obtained by using fertilizer, the mangels may be reckoned at 12c. per bushel. The cost of the fertilizers are as follows: Muriate of potash, 2½c. per lb.; nitrate of soda, 3c. per lb., and acid phosphate, 1c. per lb. Then we have:

	Value of Increase Per Acre.	Cost of Fertilizer Per Acre.	Profit Per Acre.
Complete test—Acid phosphate, muriate of potash and nitrate of soda...	611 × 12=$73.32	$13.40	$60.02
Acid phosphate and nitrate of soda...	263 × 12=$31.56	$9.40	$22.16

In the above, as below, the quantities are all reckoned per acre. In the above, the plot treated with complete fertilizer may have been slightly better situated in regard to drainage and quality of soil than the other two plots, but not sufficient to make a difference of more than 75 bushels per acre, probably not that.

TURNIPS.

Per Acre.	Yield Per Acre. Bushels.	Increased Yield Per Acre. Bushels.
Plot 1—No fertilizer	808	
Plot 2—Nitrate of soda, 160 lbs. Muriate of potash, 120 lbs. Acid phosphate, 500 lbs.	1362	554
Plot 3—Acid phosphate, 500 lbs. Nitrate of soda, 160 lbs.	1117	309

PROFITS.

Turnips, 9c. per bushel.

	Value of Increase Per Acre.	Cost of Fertilizer Per Acre.	Profit Per Acre.
Plot 2— Complete fertilizer— Acid phosphate, muriate of potash, nitrate of soda...	554 × 9=$49.86	$12.80	$37.06
Plot 3— Acid phosphate, nitrate of soda.....	309 × 9=$27.81	$9.80	$18.01

R. J. MESSENGER.

SEED SELECTION FROM A FARMER'S STANDPOINT.

From an address by J. M. McCallum, before the Ontario Winter Fair, December, 1907.

Strictly speaking, farmers have always paid more or less attention to the procuring of their seed grain. Some have considered that, by cleaning a portion of their own general crop two or three times with their fanning mill, they have done all that is necessary. Others save a portion of their seed from the best field; others save the seed from the best part of the best field, while still others depend upon change of seed from some other farmer as their supply for the next crop. Now, all of these methods were all right in their day, and certainly must have resulted in improvement ; but, in order to keep abreast of the progress in other branches of practical agriculture, we must resort to some advanced system of improving our seed supply. The best and most satisfactory method we know of to-day is by the special seed-plot, in conjunction with careful and timely hand selection of the best heads from the strongest plants, which means a constant improvement from year to year.

The seed-plot system, as a source of seed, is very simple in detail. The beginner, having selected his variety, procures a sufficient quantity of seed to sow at least a quarter of an acre of ground, which ground should be in a good state of cultivation, and as free as possible from weeds. In sowing the seed in this plot, it is well not to sow too thickly, in order to secure good full development of the plants. Some growers follow the plan of sowing from only every second spout of the seed drill. This plan has to recommend it the fact that it allows more chance for the selection of heads at harvest time, and allows for fuller development of plants in the rows. Next comes the slection of plants, which is done at harvest time, while the crop is still standing, and let me here say that this is really the most important stage of the whole work. The grower must first have an ideal in his mind ; he must decide what type of plant to perpetuate, and carry on the work of selection accordingly. Keeping this ideal in view, he should select from the strong, vigorous, healthy plants, such heads as are superior to the surrounding heads, without having been grown in more favored condition. This starting-point once secured, all progress lies in continued selection. The number of heads selected should be sufficient to furnish enough seed to sow the quarter-acre seed-plot next year. If time and help permit, it is well to have an extra quantity of seed, to avoid losing well-bred seed in case of one year's failure of crop. The remainder of the crop on the plot will furnish improved seed for the general crop on the farm. The objects of this system are twofold : Firstly, to develop and maintain a high-class strain of seed, adapted to the conditions existing on the grower's farm; and, secondly, to keep up a supply of pure seed for the grower's own use.

One objection which might be raised to following this system is the amount of time taken up in the work of hand-selection in these times of expensive farm labor. When we consider the permanence of results, and the increase in the